



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/624,340

07/21/2003

Brent A. McClure

MI22-2067

6987

21567

7590

07/13/2006

WELLS ST. JOHN P.S.  
601 W. FIRST AVENUE, SUITE 1300  
SPOKANE, WA 99201

EXAMINER

HA, NGUYEN T

ART UNIT

PAPER NUMBER

2831

DATE MAILED: 07/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/624,340

Applicant(s)

MCCLURE ET AL

Examiner

Nguyen T Ha

Art Unit

2831

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,5-41,52,55-63 and 71-78 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,5,8-11,13-41,52,55,57-63 and 71-78 is/are allowed.
- 6) ☒ Claim(s) 6,7,12 and 56 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>0606</u>  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### **Request Continuation Examination**

1. The request filed on 6/22/2006 for a Request Continuation Examination (RCE) under 37 CFR 1.53(d) based on parent Application No. 10/624,340 is acceptable and a RCE has been established. An action on the RCE follows.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 6-7, 12 and 56 have been considered but are moot in view of the new ground(s) of rejection.

### ***Response to Amendment***

3. The examiner acknowledges the applicant's submission of the amendment dated 12/21/2005. At this point, claims 1, 6, 12, 52, 55, 56, 71, and 75 have been amended, claims 2-4, 53 and 54 cancelled herein, claims 42-51 and 64-70 previously canceled. Claims 1, 5-41, 52, 55-63, and 71-78 are pending in the instant application.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 6-7, 12 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park (US 5,774,327) in view of Bhattacharyya (US 6,800,892).

Regarding claims 6 and 56, Park discloses a capacitor construction (figure 6) comprising:

- a first electrode (32);
- an insulative nitride layer/barrier layer (31) between the first electrode and a surface supporting (26) the capacitor construction;
- a capacitor dielectric (33) over the first electrode; and
- a second electrode (34) over the capacitor dielectric (see column 5, lines 18-40).

Park lacks a memory cell comprising a plurality of memory cells.

Bhattacharyya teaches a memory cell comprising a plurality of memory cells (202, 204, 206).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the Park capacitor's in to the memory cell as taught by Bhattacharyya in order to make a good performance for the system.

Regarding claim 7, Park discloses the first electrode is on the nitride layer (figure 6).

Regarding claim 12, Park discloses the nitride layer comprises silicon nitride (column 7, lines 1-6).

***Allowable Subject Matter***

6. Claims 1,5, 8-11 13-41, 52, 55, 57-63, and 71-78 are allowed.

The following is an examiner's statement of reasons for allowance:

With respect to claims 1,5, 8-11, 52, 55, 57-58, 71-72 and 75-76 the prior art alone or in combination does not teach the limitation of a capacitor construction comprising a conductive nitride layer between a first electrode being in conductive contact with the nitride layer, and a second electrode over the capacitor dielectric, the capacitor construction exhibiting a lower RC time constant compared to an otherwise identical capacitor construction lacking the conductive nitride layer.

With respect to claims 13-23, the prior art alone or in combination does not teach the limitation of a capacitor construction comprising: a rough silicon layer, a nitride layer under the rough silicon layer, a capacitor dielectric over the rough silicon layer.

With respect to claims 24-33, the prior art alone or in combination does not teach the limitation of a capacitor construction comprising: a conductive rough silicon layer over a support surface, a nitride layer between the rough silicon layer and the support surface, a first electrode comprising the rough silicon layer.

With respect to claims 34-41, the prior art alone or in combination does not teach the limitation of a capacitor construction comprising: a composite first electrode comprising a first conductive layer over and in conductive contact with the storage node and comprising a conductive polysilicon layer over and in conductive contact with the

first conductive layer, the first conductive layer exhibiting a first conductivity greater than a second conductivity of the polysilicon layer.

With respect to claims 59-63, the prior art alone or in combination does not teach the limitation of a capacitor construction forming method comprising: forming a conductive polysilicon layer over and in conductive contact with the first conductive layer, the first conductive layer exhibiting a first conductivity greater than a second conductivity of the polysilicon layer and the first conductive layer and polysilicon layer being comprised by a composite first electrode.

With respect to claims 73-74 and 77-78, the prior art alone or in combination does not teach the limitation of a memory device comprising: a composite first electrode comprising a first conductive layer over and in conductive contact with the storage node and a conductive polysilicon layer over and in conductive contact with the first conductive layer, the first conductive layer exhibiting a first conductivity greater than a second conductivity of the polysilicon layer.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen T. Ha whose telephone number is 571-272-

1974. The examiner can normally be reached on Monday-Friday from 8:30AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 571-272-2800 ext. 31. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NGUYEN T. HA  
PRIMARY EXAMINER

NH

July 10, 2006